

**IN THE CLAIMS**

The claim set provided below is intended to reflect amendment of previously pending claims 27-29. The specific amendments to individual claims are detailed in the following marked up set of claims.

1-14. (Cancelled)

15. (Withdrawn) A variegated nucleic acid library encoding Fn3 polypeptide monobodies comprising a plurality of nucleic acid species each comprising a plurality of loop regions, wherein the species encode a plurality of Fn3  $\beta$ -strand domain sequences that are linked to a plurality of loop region sequences,

wherein one or more of the loop region sequences vary by deletion, insertion or replacement of at least two amino acids from corresponding loop region sequences in wild-type Fn3, and

wherein the  $\beta$ -strand domain sequences of the monobody have at least a 50% total amino acid sequence homology to the corresponding amino acid sequences of  $\beta$ -strand domain sequences of the wild-type Fn3.

16. (Withdrawn) The variegated nucleic acid library of claim 15, wherein one or more of the loop regions encodes:

- i) an AB amino acid loop from residue 15 to 16 inclusive;
- ii) a BC amino acid loop from residue 22 to 30 inclusive;
- iii) a CD amino acid loop from residue 39 to 45 inclusive;
- iv) a DE amino acid loop from residue 51 to 55 inclusive;
- v) an EF amino acid loop from residue 60 to 66 inclusive; and
- vi) an FG amino acid loop from residue 76 to 87 inclusive.

17. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the loop region sequences vary from the wild-type Fn3 loop region sequences by the deletion or replacement of at least 2 amino acids.

18. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the monobody loop region sequences vary from the wild-type Fn3 loop region sequences by the insertion of from 3 to 25 amino acids.

19. (Withdrawn) The variegated nucleic acid library of claim 15, wherein a variegated nucleic acid sequence comprising from 6 to 75 nucleic acid bases is inserted in any one of the loop regions of said species.

20. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated sequence is constructed so as to avoid one or more codons selected from the group consisting of those codons encoding cysteine or the stop codon.

21. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the BC loop.

22. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the DE loop.

23. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the FG loop.

24. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the AB loop.

25. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the CD loop.

26. (Withdrawn) The variegated nucleic acid library of claim 15, wherein the variegated nucleic acid sequence is located in the EF loop.

- ✓ 27. (Currently Amended) A fibronectin-peptide display library derived from the variegated nucleic acid library of claim 15, comprising fibronectin type III (Fn3) polypeptide monobodies, each Fn3 polypeptide monobody comprising at least two Fn3  $\beta$ -strand domain sequences with a loop region sequence linked between each Fn3  $\beta$ -strand domain sequence,  
wherein at least one monobody loop region sequence varies as compared to the wild-type (SEQ ID NO:110, Figure 2) loop region sequence by deletion of two to twelve amino acids in the loop region sequence, insertion of at least two to 25 amino acids, or replacement of at least two amino acids in the loop region sequence, and  
wherein the polypeptide monobody loop region comprises a peptide with at least two amino acids that binds to a specific binding partner (SBP) to form a polypeptide:SBP complex.

- D 28. (Currently Amended) <sup>are</sup> ~~A~~ fibronectin-peptide display library of claim 27, wherein the peptide is displayed on the surface of a bacteriophage or virus.

- cancel  
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3 29. (Currently Amended) <sup>The</sup> ~~A~~ fibronectin-peptide display library of claim 28, wherein the bacteriophage is M13 or fd.

30-35. (Cancelled)

36. (Withdrawn) A kit for identifying the amino acid sequence of a polypeptide molecule capable of binding to a specific binding partner (SBP) so as to form a polypeptide:SSP complex wherein the dissociation constant of the said polypeptide:SBP complex is less than  $10^{-6}$  moles/liter, comprising the peptide display library of claim 28.

37. (Withdrawn) A kit for identifying the amino acid sequence of a polypeptide molecule capable of catalyzing a chemical reaction with a catalyzed rate constant,  $k_{cat}$ , and an uncatalyzed rate constant,  $k_{uncat}$ , such that the ratio of  $k_{cat}/k_{uncat}$  is greater than 10, comprising the peptide display library of claim 28.

38-39. (Cancelled)